## REMARKS

Claims 1-3, 5-14, and 17-23 are presently pending, of which claims 1, 11, and 14 are independent. In the Office Action mailed September 15, 2008, the Examiner withdrew the prior rejections of all pending claims under 35 U.S.C. § 112 and 35 U.S.C. § 103 in light of the previous response. Applicant thanks the Examiner for the withdrawal of these rejections. The Examiner has now (a) objected to claim 1 due to an informality and (b) rejected all pending claims under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Applicant has amended claim 1 by changing "radio frequency processing circuitry" to "radio frequency signal processing circuitry," thus addressing the informality raised by the Examiner. Applicant respectfully traverses the rejections of all pending claims under 35 U.S.C. § 101 and requests reconsideration.

### A. Claims 1-3, 5-13, and 17-23

The Examiner asserts that claims 1-3, 5-13, and 17-23 "are directed towards a mathematical abstract," and as such "it is unclear how [the claims] result in a useful, tangible, and concrete result that provide[s] more than a mere mathematical manipulation." Office Action at p. 3. Additionally, the Examiner asserts that "while the preamble states that the method is performed using a computer, . . . little to no weight is assigned to that which is in the preamble," and thus "there lacks sufficient tie to another statutory class." Office Action at p. 3.

Claim 1 recites a method using a computer for simulating radio frequency (RF) signal processing circuitry that includes (a) forming a matrix representation of an RF signal in a wireless communication system, wherein the RF signal is substantially zero between a plurality of frequency bands, and wherein the matrix is formed of a plurality of pieces, each piece representing a frequency band, (b) performing processing on the matrix representation to simulate operation of the RF processing circuitry on the RF signal, the processing forming a

processed matrix representation of the RF signal, and (c) converting the processed matrix representation of the signal to a representation of the RF signal as operated on by the RF signal processing circuitry.

Similarly, claim 11 recites method using a computer for modeling circuitry that includes (a) converting a representation of a first RF signal to a matrix representation, wherein the first RF signal is substantially zero between a plurality of frequency bands, and wherein the matrix is formed of a plurality of pieces, each piece representing a frequency band, (b) processing the matrix representation to form a further matrix representation to simulate operation of RF circuitry on the first RF signal, and (c) converting the further matrix representation to a representation of a second RF signal resulting from operation of the circuitry on the first RF signal.

As an initial matter, Applicant respectfully submits that the "useful, tangible, and concrete result" inquiry is not the test for determining whether a method claim satisfies 35 U.S.C. § 101. *See In Re Bilski*, No. 2007-1130, 2008 U.S. App. LEXIS 22479, at *40 (Fed. Cir. Oct. 30, 2008). Instead, the proper test for determining whether a method claim satisfies 35 U.S.C. § 101 is whether the claimed method "(1) is tied to a particular machine or apparatus, *or* (2) it transforms a particular article into a different state or thing." *Id.* at *24. Claims 1 and 11 meet both aspects of *In Re Bilski's* machine-or-transformation test.

First, claims 1 and 11 both transform an article into a different state or thing. In particular, claims 1 and 11 both recite processing a representation of an RF signal to simulate operation of RF circuitry on the RF signal, and then forming a representation of the RF signal as operated on by the RF signal processing circuitry. As such, clams 1 and 11 transform an article – a representation of the original RF signal – into a different state or thing – a representation the RF signal as operated on by RF signal processing circuitry. In this respect, the article being transformed in claims 1 and 11 is an eligible article under *In Re Bilski*. For example, the article being transformed is sufficiently specific, because it represents an RF signal that is substantially

8

zero between a plurality of frequency bands. Further, the article being transformed represents a tangible object, because the RF signal carries wireless communication.

Because claims 1 and 11 transform an eligible article under *In Re Bilski*, those claims do not pre-empt use of a fundamental principle. Indeed, to the extent that claims 1 and 11 include a fundamental principle, those claims encompass only a particular application of the fundamental principle, that being the simulation of RF processing circuitry operation on an RF signal. For at least these reasons, claims 1 and 11 satisfy the transformation aspect of *In Re Bilski's* machine-or-transformation test, and thus claims 1 and 11 and their dependent claims are patentable under 35 U.S.C. § 101. *See, e.g., In Re Bilski*, 2008 U.S. App. LEXIS 22479, at *49-50.

Additionally, claims 1 and 11 are both tied to a particular machine or apparatus. In particular, claim 1 recites "a computer for simulating radio frequency signal processing circuitry." Similarly, claim 11 recites "a computer for modeling circuitry." For this additional reason, claims 1 and 11 and their dependent claims are patentable under 35 U.S.C. § 101.

Accordingly, Applicant respectfully requests withdrawal of the rejections of claims 1-3, 5-13, and 17-23 under 35 U.S.C. § 101.


**B.     Claim 14**

The Examiner asserts that claim 14 "comprises a software system and is therefore held as software *per se*." *See* Office Action at p. 3. Applicant respectfully disagrees. As an initial matter, Applicant submits that not all recited software is excluded from patentability under 35 U.S.C. § 101. *See, e.g.,* MPEP 2106.01. Instead, only computer programs representing computer listings *per se* are non-statutory under 35 U.S.C. § 101. *See, e.g.,* MPEP 2106.01. Claim 14, however, does not recite a mere computer listing *per se*. Indeed, claim 14 recites a "system for performing RF signal processing modeling" that includes "a computer." As such, claim 14 is not directed to non-statutory subject matter.

9

Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 14 under 35 U.S.C. § 101.

## CONCLUSION

In light of the above amendment and remarks, the Applicant submits that the present application is in condition for allowance and respectfully requests notice to this effect. The Examiner is requested to contact the Applicant's representative below if any questions arise or if he may be of assistance to the Examiner.

Respectfully submitted,

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